Some Positive Reactions to CBAT

Now at http://www.gci.org.uk/CBAT_AUBREY/CBAT/index.html#domain-1

1. Sir David King; UK Government Special Representative Climate Change
2. Michael Hutchinson; Director Tangent Film
3. Dr Sarah Perkins; University of New South Wales
4. Dimitri Zenghelis; Sir Nicholas Stern, Alina Averchenkova LSE
5. Dr Chris Rapley; Former Director British Science Museum
6. Dr Mayer Hillman; Policy Studies Institute
7. Rabbi Jeffrey Newman;
8. Professor Bill McGuire; Geophysical and Climate Hazards UCL
9. Ernst von Weizsacker; Chairman Club of Rome
10. Professor Mark Maslin: Geography UCL
11. Professor Don Brown; Widener Law School Pennsylvania
12. Jelle Hielkema; former FAO Rome
13. Laurie Barlow; American Institute of Architects California
14. Dr Tom Barker; Head of Education, Centre for Alternative Technology
15. Dr Keith Baker; ICARB
16. Dr Geoff O'Brien; University of Northumbria
17. Professor Tim O'Riordan; Environmental Science Management UEA
18. Professor Ross Garnaut; Garnaut Climate change Review Australia
19. Lord Anthony Giddens; LSE
20. Professor Herman Daly; School of Public Policy, Maryland USA 21.

Dr Andrew Dlugolecki; UNEP Finance Initiative 22. Dr Julian Salt; Insurance Industry 23. Chris Rose; Former Greenpeace Campaigns Director

24. Liveable City Awards; City of London
25. Michael Meacher; Former Minister DEFRA
26. Lewis Cleverdon; GCI
27. MPs All Party Parliamentary Group Climate Change;
28. Tamas Szabadaos; Budapest Hungary
29. Tim Smit; Director of the EDEN Project
30. Richard Betts; UKMO
31. Adair Turner; Former Chair of the Climate Change Committee
32. David Wasdell; Director of the Apollo Gaia Programme
33. Rupert Read; Chair the Green House
34. Dr Chris Shaw; Tyndall Centre for Climate Change Research
35. Rowan Williams; former Archbishop of Canterbury
36. Dr Chris Groves; Cardiff University
37. Professor Katherine Hayhoe; Technical University Texas

Sir David King Former Government Chief Scientist now Government Special Representative on Climate Change at FCO

CBAT is obviously a great piece of work.

DECC's GLOCAF is really an energypolicy model and I understand the need to include feedback-related emissions. It is important to deal with worst-case scenarios, and clearly this includes feed-back effects. At this point however, they are difficult to quantify or even estimate, however important. Converting this into impacts is what the 'Carbon Budget Accounting Tool' (CBAT) programme deals with and CBAT is obviously a great piece of work.

UK Government Special Representative for Climate Change Sir David King

Michael Hutchinson Director of Tangent Films

CBAT - Hugely impressive and brilliantly clear."

I believe the most urgent priority, as a basis for an effective climate deal, is for nations to agree and act upon clear and transparently fair principles for sharing the burden of keeping within a finite science-based carbon budget.

The public needs to understand why the self-set national carbon targets promised after Lima are very unlikely to be adequate; and governments need to understand that it will be hard to implement tougher carbon reduction measures without wider public understanding of the issues.

Aubrey Meyer's new Carbon Budget Analysis Tool (CBAT), which he developed with two mathematicians from Oxford, can really help this. It's a hugely impressive and brilliantly clear tool for showing how deeply and fast global carbon emissions need to be cut. If you haven't seen it, please take a look here

CBAT is attracting great interest from some key people - including Nicholas Stern's team at LSE. Its algorithms integrate a million permutations of IPCC data to illustrate the inter-relationship between different carbon pathways, a range of atmospheric concentrations of CO2, average temperatures and their impact on economic growth and the cost of climate damages.

Unlike official climate projections, CBAT can factor in variable rates of climate feedbacks. Scientists are very wary of doing this as they have no hard numbers to go on and the interactions between different feedbacks cannot be predicted. This is why feedbacks are excluded from the RCPs in the IPCC AR5.

However, as Nicholas Stern recently commented, the best guess is that the warming effect of feedbacks won't be zero. This is one reason why David King, Chris Rapley and Bill McGuire have all commented favourably on CBAT, which also projects the effect and economic consequences of a C&C based agreement for burning different carbon budgets over different periods and at different rates.

CBAT is a 'user as chooser' tool which helps anyone understand the projected consequences of different dates/rates of carbon contraction far more clearly than words. It really does shine new light on the unarguable maths of dealing with climate change, to which we must respond.

Dr Sarah Perkins Climate Research Centre University of New South Wales

"CBAT is extremely well put together & useful.
It should be the go-to tool for all our Governments.

CBAT is an extremely useful tool, and shows what needs to be done to reduce our emissions on a range of scenarios. It is extremely well put together and fascinating, and a little scary depending on what parameters you change! It should be a go-to resource for all our governments.

Because of the level of detail and scenarios it considers and the quantitative figures, someone needs to share this with the Australian government. Along with all national governments, they would benefit greatly from understanding how our future will or will not change due to the choices we make now and in the near future. Its a testament to CBAT that the UK are already using it.

I will keep this tool on file and refer to it when necessary."

Dimitri Zenghelis, Sir Nicholas Stern, Alina Averchenkova Grantham Institute

"Very useful: your comments may help inform future runs of DECC's GLOCAF model."

Dear Aubrey,

Many thanks for this. (I sent some CBAT information).

*We did run various scenarios which supported the broad conclusions of our paper. **one of which was precisely that the urgency of emissions reductions subject to growth and population projections swamps the distribution of ethical drivers.** (I profoundly agree with this and wrote them to say so).*

But it is important that we have the cited C&C numbers right. I have informed colleagues, including those at DECC, for whom your comments might help inform future runs of the GLOCAF model.

Sir Nicholas Stern, Dimitri Zenghelis, Alina AVerchenkova
Centre for Climate Change Economics and Policy Grantham Research Institute on Climate Change and the Environment

Doctor Chris Rapley Former Director British Science Museum –

CBAT - impressive; offers a very useful insight into an issue over which many people are very confused."

I agree that Aubrey's CBAT graphs offer a very useful insight into an issue over which many people are very confused."

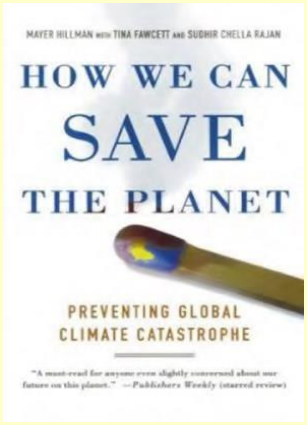
Scientist **Chris Rapley** CBE is Professor of Climate Science at University College London and Chair of the London Climate Change Partnership. He was director of the Science Museum from 2007 to 2010 and awarded the Edinburgh Science Medal.

He was Executive Director of the International Geosphere-Biosphere Programme IGBP from 1994-1998, and Director of the British Antarctic Survey from 1998-2007.

Doctor Mayer Hillman -

Success, after years of intellectual rigour and dedication. CBAT is brilliant.

SUCCESS; After so many years since we met in 1990, of applying intellectual rigour & dedication, how satisfying it must be for you to return at last the poisoned chalice to those who have broadcast the view that you are misguided. Just BRILLIANT!'
Mayer



"A brilliant, imaginative and simple means of reaching such an agreement on emission reductions has been put forward. Known as Contraction and Convergence (C&C), it was first proposed by the Global Commons Institute (GCI) in the early 1990s. Recognition of its unique qualities as a framework for combating climate change has grown at an astonishing rate since that date. It is thought by an increasingly influential number of national and international institutions to be the most promising basis for global negotiations." How We Can Save the Planet
Mayer Hillman on C&C

Dr. Mayer Hillman
Senior Fellow Emeritus
Policy Studies Institute
c/o The Coach House 7a
Netherhall Gardens
London NW3 5RN

Rabbi Jeffrey Newman

Dear Aubrey,

Many, many thanks & congratulations on getting this next major step with CBAT underway. Many of us believe that C&C is the only game in town. CBAT is a major step forward. I assure you of my on-going and dedicated support.

When I first realized that the world is standing by, watching the destruction of millions, or hundreds of millions of its inhabitants through climate change - heat, drought, food scarcity and so on - it reminded me of those who 'stood by' and watched the deliberate attempted annihilation of the Jewish people. This new genocide is avoidable and I am writing to assure you of my on-going, dedicated support for the principle of Contraction and Convergence.

As I understand it, this is an equitable, essentially simple, mathematical formula through which it becomes possible for scientists to calculate the Carbon Emissions which the planet can sustain at any time and to determine the per capita (tradable) allowances for fair distribution.

The sooner the formula or one clearly based upon it is adopted, the sooner futile arguments, obfuscation and delay can be ended and there can be a determined effort to reduce our fossil fuel energy use and replace them with renewable.

I will do all I can to support you and others in publicising your ideaand turning it into reality.
In friendship and with love,

Jeffrey

Rabbi Jeffrey Newman

Professor Bill McGuire

GCI's brilliant CBAT visualization tool sidesteps wishful thinking & provides a sharp dose of reality. I urge all to use & promote it.

The failure of IPCC5 and the [UKMO's] UK Climate Act to address the critical issue of carbon feedbacks, particularly in relation to methane release as a consequence of permafrost thawing, is both disappointing and dangerous.

By effectively setting the likely consequences of such feedback effects at zero, future temperature projections are minimised, so pandering to those who wish to play down the level of warming we can expect and reducing the perceived impact of climate change down the line.

By separating out the effects of human-induced & feedback-related emissions, the GCI's brilliant CBAT visualisation tool sidesteps the wishful thinking & provides a sharp dose of reality.

I urge all who wish to view a true picture of how climate change will transform our world as the century progresses to use it and promote it.

Bill McGuire Professor of Geophysical & Climate Hazards,
University College London [UCL]
Director UCL's Aon Benfield UCL Hazard Centre [1997 2010]

"CBAT is a fine tool for a gruesome reality forecast."

Dear Aubrey,

You are most welcome adding my name as a supporter.

Best

Ernst

Prof. Dr. Dr. h.c. Ernst Ulrich von Weizsäcker
Co-Chair, International Resource Panel (UNEP)
P.O. Box 1547, 79305 Emmendingen, Germany

Having reviewed the trends in the use of natural resources and accompanying undesirable environ-mental impacts in the first section of Chapter 2, the last section of that chapter considers possible future implications by presenting three brief scenarios:

1. business as usual (leading to a tripling of global annual resource extraction by 2050);
2. moderate contraction and convergence (requiring industrialized countries to reduce their per capita resource consumption by half the rate for the year 2000); &
3. tough contraction and convergence (aimed at keeping global resource extraction at its current levels).

None of these scenarios will lead to actual global reductions in resource use, but all indicate that substantial reductions in the

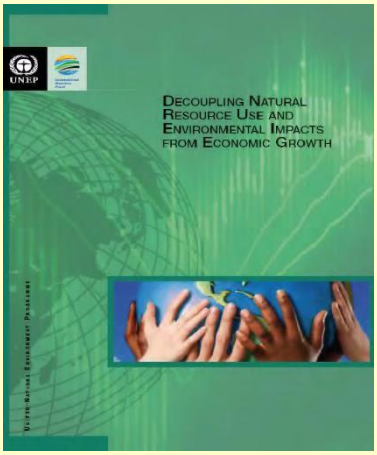
resource requirements of economic activities will be necessary if the growing world population can expect to live under conditions of sustainable resource management. **Ernst von**

The key message of the tough scenario is that despite population growth to roughly 9 billion people, the pressure on the environment would remain roughly the same as it is now.

The emissions correspond approximately to the lowest range of scenario B1 of the IPCC SRES, but are still 20% above what was advocated by the Global Commons Institute for contraction and convergence in emissions (GCI, 2003).

UNEP 2011: Decoupling Natural Resource Use & Environmental Impacts & Economic Growth. Dr Ernst von Weizsacker, Dr Ashok Khosla, Co-Chairs International Resource Panel

Weizsacker Chairman Club of Rome –



Professor Mark Maslin UCL -

Dear Aubrey

CBAT is a wonderful tool and an excellent tool which I will recommend to students to understand the link between emissions and impacts. Many thanks for sending it to me and fingers crossed for some sort of agreement at Paris

All the best

Mark

Professor Mark Maslin
Department of Geography,
University College London,
Pearson Building,

Gower Street,
London.
WC1E 6BT.

Professor Don Brown Widener Law School Pennsylvania -

"C&C embedded in CBAT is a very important tool for policy-makers."

The CBAT is a very important tool for policy makers and citizens to understand the implications of policy options for achieving a global solution to climate change.

An understanding of the implications of national climate policies requires a deep understanding of complex relationships between the temperatures likely to be caused by ghg atmospheric concentrations, (conclusions which change depending upon different assumptions that can be visualized in the CBAT).

Global budgets that will achieve various atmospheric ghg concentrations, equity implications of global emissions budgets, and reductions pathways for achieving carbon budgets that change depending on the time the world gets on an adequate reduction pathway among other things.

Although I understand these issues, the complexity of the connections between these variables makes mental visualization of these relationships impossible even for me, someone who somewhat understands these issues. The CBAT helps immensely improving an understanding of these issues.

The CBAT is therefore an important contribution to understanding the civilization challenging problem the world faces and the potential harsh impacts from climate change that change depending on national policies on climate change which must implicitly make assumptions about the complex relationships between variables displayed in the CBAT.

Donald A. Brown Scholar In Residence and Professor Sustainability Ethics & Law Widener University School of Law, Harrisburg, Pennsylvania
Part-Time Professor, Nanjing University of Information Science & Technology, Nanjing, China.
Climate Change Ethics: Navigating the Perfect Moral Storm

Dear Aubrey;

I fully support efforts to make contraction and convergence (C&C) the central framework for allocating national greenhouse gas emissions in the years ahead. C&C is also flexible enough to deal with several equity issues raised by others.

I [also] believe the new CBAT model should be of great value both to international climate negotiators, governments and NGOs engaged in international climate negotiations. It allows those interested in developing a global solution to visualize the otherwise complex interactions of international carbon budgets, atmospheric greenhouse gas concentrations, and emissions reductions commitments. Although I am personally familiar with the relationships between the variables represented in the CBAT, I found having the ability to change inputs to the model

through the use of the CBAT made me understand at a deeper level the policy choices facing the international community. The CBAT model should be very useful for all who hope to understand future climate change policy options and the scale of the global challenge facing the world.

I have been engaged in climate change policy options since the 1992 Earth Summit at which the United Nations Framework Convention was opened for signature and have attended most of the Conference of Parties under the UNFCCC since then. Yet even though I have significant experience and knowledge about future climate change policy challenges, the CBAT model helped me visualize the significance of certain policy options facing the world.

Donald A. Brown
Scholar in Residence, Sustainability Ethics and Law, Widener University School of Law

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Sustainability Ethics and Law, Widener University School of Law, Pennsylvania, USA:

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Jelle Hielkema ex FAO Rome

'Fabulous terrific so clear & so clean - Congratulations'

Coming from Music, the purest expression of Nature, Aubrey Meyer has put his energies for the last 24 years into formulating, giving shape to and also getting very substantial support for, a solution to the challenge presented by the global climate changes which we are all now facing and which so seriously threaten our future. This solution is called 'Contraction and Convergence (C&C).

No-one has framed & communicated the response strategy for negotiating and achieving compliance with the objective of the UNFCCC [if we can still achieve it], more perfectly than Aubrey Meyer with the C&C concept & campaign & support for this is already extensive & diverse.

Here C&C has been developed into the rigorous 'Carbon Budget Analysis Tool' (CBAT). Having done-the-maths, this peerless and quite beautiful heuristic device is user-interactive in a userfriendly way.

The CBAT's user's two main controls are: -

1. *a vertical slider for the 'carbon-weight' of emissions budgets and atmospheric concentrations, [the fundamental challenge facing UNFCCC negotiators] and*
2. *a horizontal slider for inter-regional convergence rates for emissions budgets across time [the challenge arising for the negotiators - how to share that budget].*

Together with other controls for a range of different budgets, feedback types, levels of climatesensitivity and consequential values for temperature, sea-level rise and ocean acidity, it brings a high degree of strategic clarity to the policy debate that has been completely lacking so far. So I wholeheartedly recommend its use to the concerned public and the policy community.

- *Domain One - Contraction and Concentrations – quantitatively analyses the relationship between possible future greenhouse gas emissions scenarios and how these might accumulate in future atmospheric concentrations paths, especially in the light of potential runaway feedback effects.*
- *Domain Two - 'Contraction and Convergence - captures any of the Carbon Contraction Budgets chosen in Domain One and gives users the choice of setting any start-date and any end-date for any 'convergence window' inside any of those contraction rates.*

CBAT is default programmed with three carbon-budgets HI LOW & MEDIUM [MEDIUM is equivalent to the UK Climate Act]. However any carbon-budgets can be programmed into CBAT and it will simply analyse and display whatever carbon budgets it is presented with. This is appropriate as CBAT is primarily a 'policy-model' rather than a climate-model.

Another compelling feature of the version of CBAT already online and working, will soon be tabulated numerical values of the choices made combing Domains One and Two. These users will be able to summon at will.

Aubrey Meyer has credibly conceived 'Contraction and Convergence (C&C)' for the Common Good of Humanity with the skill of 'the Art of the Long View', so sadly missing in this world's political 'scheme of play'! Yet, without a C&C mechanism in place it's becoming more and more obvious that our children and particularly their children will have to 'deal and cope' with a world increasingly beleaguered by its own seriously modified planetary climate. No denying of that anymore and 'those in charge' better wake up to that stark Reality and act accordingly!"

Laurie Barlow AIA California

"This is terrific, works very cleanly, congratulations! This is a major leap forward."

"CBAT is truly excellent! Just an incredible tool. You were fortunate to find people capable of working with you to produce the correct interactive digital structure that follows your logic.

It's showing the interconnectedness of the three factors (temperature, acidity, and sea level) with a graphic user interface, which nobody else has done. I don't think too many people "do the math" correctly, it requires an iteration of calculations and an examination of the different scenarios to understand the impact of 450 PPMV as a "runaway" scenario, and how many Gt C's per year have to be reduced in order to avoid it.

This escapes the political posturing and goes directly to the analysis of the problem in such a way that people can understand the consequences and visually see what could happen in the future.

Static charts can't show these relationships, especially with the segregated feedback scenario that reflects the planetary feedback relationships being added to human emissions and shows the acceleration of the impact of carbon on the biosphere. Depressingly, even with carbon emissions at zero, we don't get back to the planet we had in 1960 (316 PPMV), let alone the levels before the industrial revolution (260–280 PPMV).

It's outstanding and terrifying as an exercise in observing the possible and the probable that now lies in our future. It's Bill McKibben's challenge to "do the terrifying math" finally made accessible to everyone. What do you suppose Jim Hansen (US Government) will say to this? Pretend they can't understand it?

Question to the world: How do we pull that slider down to the lowest position [-40], equal to the concentrations level falling to equal the starting position in 2010 or effectively a CAF-0% reference by 2110 [negative feedback]? I should think that would be a worthy challenge to the human race, one of the finest systems gaming opportunities out there. This simulation is the start of a new, comprehensive way of looking at this problem, making the Apollo program look like child's play. Which it was. And here we are at 400 ppmv half a century later."

Sincerely,
Laurie Barlow,
AIA San Marino,
California
United States of America
http://www.barlowcoweb.com/
http://greenswardcivitas.blogspot.com/

CBAT is a seriously powerful tool that makes the unknowable knowable for policy makers.

The unknowable has just become knowable.

Politicians, economists and policy-makers are faced with making decisions today on scientific details and projections they know embarrassingly little about. The Carbon Budget Analysis Tool (CBAT) will give them what they need.

CBAT is a seriously powerful dynamic tool for understanding the consequences of climate change, GHG emissions, the all-important climate feedbacks, and of course, political and economic choices.

Dr Tom Barker
Head of Education Centre for Alternative Technology
Machynlleth Powys SY20 9AZ

Tom Barker Head of Education at Centre for Alternative Technology Dr Keith Baker & Susan Roaf ICARB - *"CBAT C&C leaves naysayers nowhere to hide from the* science *& for that we all owe Aubrey & GCI a debt of gratitude."*

Politicians and policy makers frequently like to claim that there is no scientifically-agreed consensus on any robust and truly equitable approach to reducing carbon emissions.

Then you point to Contraction and Convergence (the original GCI model) and you get any number of excuses that basically boil down to fears that publicly supporting it would make them unelectable.

What CBAT really adds to the C&C model is a clear and stark illustration of the costs of not acting now. This means that it is no longer enough for policy makers to point at a C&C pathway and argue that it isn't feasible, now the reasons they give can be set directly against the impacts of not acting now, and we can all be the judge of how reasonable their excuses are.

Furthermore, by being so easily accessible and usable, if the person you're arguing with decides to shift the goal posts, all it takes is a few quick tweaks to the sliders and it's game on again.

Put simply, CBAT leaves the naysayers with nowhere to hide from the science, and for that we all owe Aubrey and the GCI a debt of gratitude.

Centre for Alternative Technology
Canolfan y Dechnoleg Amgen
Inspire, Inform, Enable

"Governments big and small will have to grit their teeth and take immediate and decisive action on climate change in the knowledge that C&C is the only realistic way forward for international climate negotiations and agreement."

Dr Tom Barker
Ecology, sustainability, ecosystem services
School of Environmental Sciences
University of Liverpool

UNIVERSITY OF LIVERPOOL
School of Environmental Sciences
Dr Tom Barker


Dr Keith Baker & Prof Susan Roaf, ICARB The Initiative for Carbon Accounting
Glasgow Caledonian University is a registered Scottish charity, number SC021474

Dr Geoff O'Brien Universtiy of Northumbria -

"CBAT will become part of my teaching – it is a very elegant tool."

I use C&C as part of my teaching on energy and climate policy. CBAT will also become part of my teaching – it is a very elegant tool. Each domain is of interest but I think the third domain (technology shifts) will prove very useful to students taking my energy module.

Like you, I believe the underlying problem is poverty and inequity. We really do need to accept that change is needed. Whether the developed world can shift culture away from consumerism is a big unknown, but for climate policy to have any chance of success we need to address the demand problem.

Keep up the good work and lets all push for an agreement in Paris! We need one – the future is very scary. I have 4 children and I want them to have a future!

Professor Tim Riordan UEA

With C&C you initiated an ingenious approach. CBAT is clearly a valuable teaching tool; well done"

Contraction and Convergence. A single NGO - the Global Commons Institute [GCI] has initiated an ingenious approach to COP-4 and beyond.

Environmental Science for Environmental Management Tim O'Riordan

Professor Ross Garnaut - *"C&C, a global standard, widely recognized & outstanding contribution to the debate on avoiding dangerous rates of climate change."*

Over the last twenty years, Aubrey Meyer's sustained work through the Global Commons Institute [GCI] with the "Contraction and Convergence" - or C&C - concept and campaign, has created a global standard. It is now widely recognized as an outstanding and essential contribution to the global debate on what to do avoid dangerous rates of climate change.

This is remarkable and reflects the integrity of the argument where C&C is mathematically rooted in the science of climate change and marries the limit to future human emissions that avoids dangerous rates of climate change to the politically compelling requirement of equal shares in the use of the atmosphere subject to that limit.

It embodies the economic political reality, that adjustment to equal per capita emissions entitlements will take time. It is a rational, flexible and transparent concept that holds out the best hope of all urgent proposals that might form a basis of an environmentally and economically rational global agreement on climate change mitigation.

The contraction and convergence idea was at the core of the proposals for international agreement that are part of the Garnaut Climate Change Review, commissioned by and presented to the Australian Prime Minister and all State Premiers.

Professor Ross Garnaut, 2008
The Garnaut Climate Change Review, Cambridge University Press

Lord Anthony Giddens

C&C in this CBAT format looks very useful to me.

Dear Aubrey, Hope all well with you. I'm happy to add my name in support. C&C is fine in this CBAT format. It looks very useful to me and I'm glad you've got a lot of backing for it.

However don't the main problems concern not the what but the how? In spite of endless UN meetings etc, thousands of good local initiatives and so on, the level of ghgs in the atmosphere continues to rise.

Many thanks for sending it and keep up the pressure.

All best,
Tony

Lord Anthony Giddens LSE

Professor Herman Daly

C&C - the basic principle that should guide climate policy; unchallenged by any other model.

Contraction and Convergence is the basic principle that should guide climate policy.
It seems to me that this policy is really unchallenged in principle by any of the climate models under discussion. Granted that it is good to have accurate models of how the world works, and to work out the numerical balances of C&C. Nevertheless, I wonder at what point complex and uncertain empirical models become a distraction from simple first principles? C&C is a necessary condition for a just and sustainable world.

With best wishes & admiration for your important work on C&C. Herman Daly Emeritus Professor University of Maryland.

Dr Andrew Dlugolecki Carbon Disclosure

C&C is the pivotal proposal.
Simple, robust, its insight into the problem of climate mitigation bears the hallmark of true genius.

Aubrey Meyer's insight into the problem of mitigation of climate change bears the true hallmark of genius: it is simple and robust. His "Contraction and Convergence" model provides a transparent framework that incorporates the clear objective of a safe global level of greenhouse gases, AND allocates the responsibility for achieving this internationally with the irresistible logic of equal shares.

At the same time, the model recognises the practical need for an adjustment period to permit nations to conform to the new logic and prepare for a climate-friendly economy. It is no doctrinaire solution, but a brilliantly pragmatic and elegant solution.

Aubrey and his tiny organisation GCI, have laboured tirelessly to bring the concept to every conceivable stakeholder's attention, from governments to NGO's, to the business world, in which I operate. Too often, mitigation is portrayed as being detrimental to economic development.

Aubrey has demonstrated through his brilliantly simple graphics that in fact mitigation is the guarantor of wealth creation, not its nemesis, and that market forces can accelerate the transition to a safer climate. This is a key message in mustering the support of the business world and already the UNEP Finance Sector Initiative has commended "C&C" to policymakers as a basis for negotiation.

In the forthcoming discussions on how to follow up "Kyoto" with more meaningful action, surely Contraction and Convergence will be the pivotal proposal that reconciles developing and developed nations' ambitions. It is only fitting that Aubrey Meyer should be recognised for creating such a seminal concept and promoting it so effectively.

Dr Andrew Dlugolecki,
Former Executive GGNU
Nobel Prize-sharing lead author of the IPCC
Advisory Board Member, Carbon Disclosure Project
Senior Advisor on Climate Change to the UNEP Finance Initiative

Julian Salt Insurance Industry

CBAT; I commend this model to any agency prepared to listen & act on Aubrey's findings. It has been an honour to know him.

For negotiators to make the next steps more effective, they have to not only grapple with the rising tide of man-made emissions, but also the far more important issue of feedback emissions (both natural and induced).

This CBAT model created by Aubrey Meyer encapsulates this issue in his usual style of beautiful imagery that at a glance will show any negotiator the seriousness of the problem at hand. CBAT will at a stroke negate all present emissions targets as futile and force them to reconsider the whole issue from a global perspective. As past efforts have shown, if this approach is not taken another 10-20 years will be wasted in more UNFCCC meetings.

He is the most courageous and brilliant climate researcher I have ever met. He is willing to say what other's merely think. He is quite fearless of any audience and the most eloquent of speaker's because he knows that ultimately the concept of Contraction and Convergence [C&C] is indestructible and will in the fullness of time be adopted in some form by the UNFCCC.

He has developed his arguments over twenty years with a minimum of funding and has refused to

compromise his position in any way for financial gain or glory. He is tireless in his research and quest to understand every nuance of the climate debate. It has been an honour for me to have known and worked with such a brilliant mind and such an honest person as Aubrey.

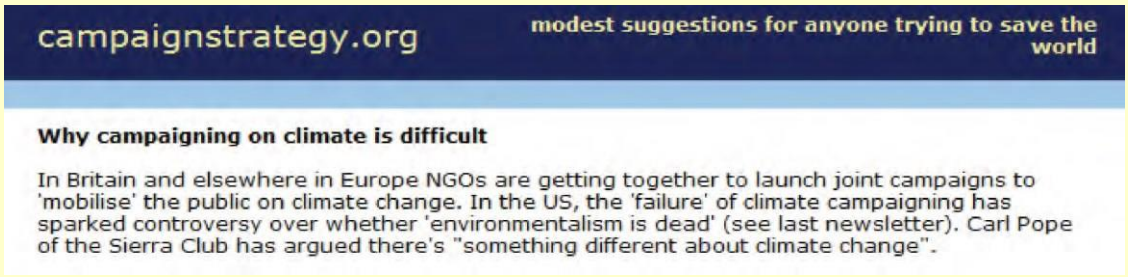
He has much support from very well placed and respectable people and deserves global recognition for his work. He is quite simply a modern-day genius who will one day be respected for his vision and beliefs. He should be considered for the Nobel Peace prize as his efforts ultimately will save the planet from the ravages of man-induced climate change.

I commend this model to any agency that cares to listen and act on his findings.

Julian Salt - Insurance Consultant

Chris Rose Former Greenpeace Campaigns Director

"Only extraordinary people like Aubrey, the father of C&C, managed to penetrate the remote climate citadel."



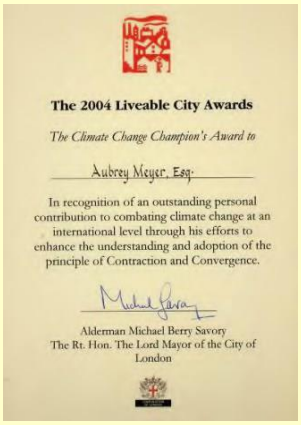
Here are ten factors which have made it hard to campaign effectively 'on climate'.

1. Scientists defined the issue
2. Governments ran off with the issue
3. There was no campaign [sequence]: NGOs adopted secondary roles
4. The issue had no public
5. The media were left to define the issue in visual terms
6. Governments soft pedalled on the issue
7. Scientists led calls for education of the public
8. Many NGOs tried to make the Framework Convention 'work'
9. Other NGOs tried to connect it with "bigger issues"
10. There is no common proposition

Only extraordinary individuals such as Aubrey Meyer, father of 'contraction and convergence', managed to penetrate this remote citadel. NGOs could prioritise it but they were stuck in someone else's game.

Campaign Strategy - Why Campaigning on Climate is Difficult
Chris Rose Former Campaign Strategist for Greenpeace

Liveable City Awards to Aubrey Meyer - "*An outstanding contribution to combatting climate change internationally with Contraction & Convergence."*
LIVEABLE CITY AWARDS 2005 17TH FEBRUARY 2005


The 2004 Liveable City Awards

The Climate Change Champion's Award to

Aubrey Meyer, Esq.

In recognition of an outstanding personal contribution to combating climate change at an international level through his efforts to enhance the understanding and adoption of the principle of Contraction and Convergence.

Alderman Michael Berry Savory
The Rt. Hon. The Lord Mayor of the City of London

"From the worlds of business, academia, politics and activism, Aubrey Meyer has made the greatest contribution to the understanding and combating of climate change having led strategic debate or policy formation. In recognition of an outstanding personal contribution to combating climate change at an international level through his efforts to enhance the understanding and adoption of the principle of Contraction and Convergence."

City of London Life-Time's Achievement Award 2005

On the day that the Kyoto Protocol comes into effect, Meyer's work on Climate Change is recognised with Lifetime Achievement Award.

In an awards ceremony at Mansion House, hosted by leading environmentalist Jonathon Porritt, The London Borough of Enfield was today named winner of the Corporation of London's Liveable City Awards 2005.

The awards, open to the City's financial community and to businesses and organisations across the UK, were established by the Corporation to promote and recognise the best in sustainable business practices.

On the day that the Kyoto Protocol came in effect, a Lifetime Achievement Award was made to Aubrey Meyer for his contributions to tackling climate change. Aubrey, author of influential book "Contraction and Convergence - the Global Solution to Climate Change", is widely recognised as providing a global framework within which to resolve policies and measures to avert climate change.

Receiving his award Aubrey Meyer commented;

"I made the effort to establish Contraction and Convergence (C&C) because a fully international agreement to avert climate change is urgently needed. It is encouraging that C&C now gathers increasing international support. To discover there are people who also feel this effort deserves acknowledgement, is reward in itself."

"However, the Liveable City Award is a very welcome surprise as many eminent people were in this competition. I am grateful to them and the Corporation of London for all their efforts, and ask that we all advocate C&C together."

He won the award in a poll, conducted by climate change company Future Forests, of MPs, FTSE 250 Chairman/CEO's, NGO's and environmental media representatives.

Judges - The final judging panel consisted of:

- Rob Bell, editor, Environment Business Magazine
- John Gummer, MP
- Deputy Peter Holland, deputy chairman, Bridge House Trust
- Ram Gidoomal, chairman, London Sustainability Exchange

Michael Meacher Ex DEFRA Minister - *"C&C is a very powerful idea from the brilliant &*

relentless campaign waged by GCI & we move remorselessly in that direction."

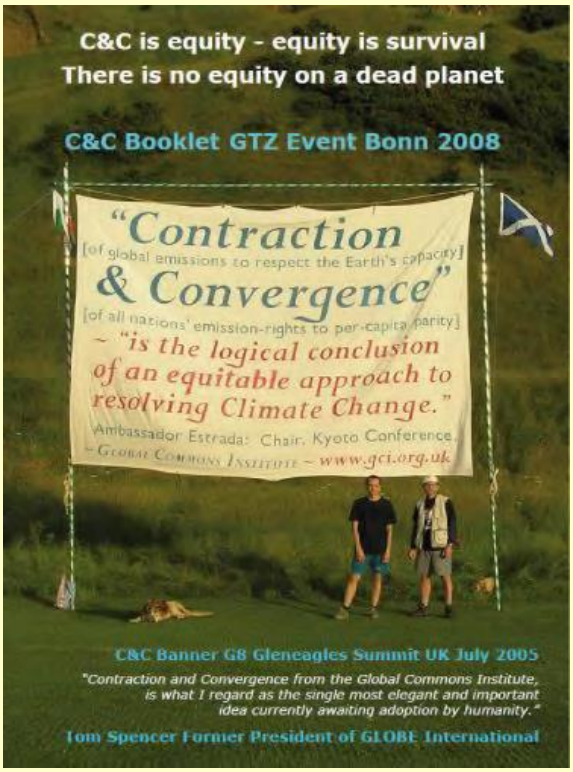
"I find 'C&C' an appealing concept. It is obviously absolutely profound in its implications. It is normally known under the title of Contraction and Convergence. In other words the developed countries contract their emissions, which is what Kyoto is all about, and we get convergence with the developing countries as they industrialise and increase their emissions....I do not think it is pie in the sky. It is certainly not just a conceptual philosophy. We are moving remorselessly in that direction".

Michael Meacher - Labour Minister at DEFRA 2001 - 2003

Lewis Cleverdon - *"CBAT is a magnificent piece of work."*

"CBAT it is a magnificent piece of work. I am not at all surprised to see the intense interest shown by the rate of visits, as more and more of the world's climate researchers, policy analysts, energy planners and others realize that they too are members of the WHERETHEHELLAREWE? tribe that decided over a decade ago to take a 'short cut' through the swamp known as 'Climate Destabilization.'"

Banner by Lews Cleverdon fronts C&C Booklet
for GTZ Conference Germany 2008



Joan Walley & 6 more All Party Parliamentary Climate Group MPs - *"We believe it would now be right to recognize the man who has done most to provide a solution."*

Aubrey Meyer - Nomination for but not winner of the 2008 Nobel Peace Prize by Martin Caton,MP & six other Members of Parliament from All Parties in the UK House of Commons

Martin's fellow nominators were: -

- Colin Challen MP (Labour),
- Peter Ainsworth MP (Conservative),
- Chris Huhne MP (Liberal Democrat),
- Michael Meacher MP (Labour),
- Joan Walley MP (Labour) and
- Tim Yeo MP (Conservative).

Martin explained, *"Aubrey Meyer may not yet be a household name, here in Britain, or indeed, in many other parts of the world. Yet his work is absolutely central to the global fight against climate change."*


Martin Nominates Meyer for 2008 Nobel Peace Prize

The Nobel Institute recognised how important the climate change challenge is to the future of our planet last year, when it awarded the prize jointly to Al Gore and the Intergovernmental Panel on Climate Change for raising awareness about this environmental threat.

"We believe that it would, now, be right to recognise the man who has done most to provide an international solution to averting the disaster of global warming. Aubrey Meyer realised that we need a comprehensive climate change framework if we are to protect our

planet. He founded the Global Commons Initiative in 1990 that developed just such a framework known as "contraction and convergence. This is the logical way forward. The human race reduces its carbon footprint towards zero at the same time as greenhouse gas emissions on a per capita basis in developed and developing nations converge. If his initiative was recognised now then it would send exactly the right message to world leaders as we consider what comes after the end of the Kyoto Protocol.

Tamas Szabados Budapest Hungary -

"The CBAT visualization tool is a good new step in explaining the dangers we face."

I very much appreciate the work that you and your associates have been performing in the last almost 25 years at the GCI. You have been fighting for explaining the immense importance of curbing the emission of greenhouse gases.

This issue should have the highest priority; unfortunately, there are many governments, political parties, politicians, and laymen who do not admit the basic facts about man-made climate change.

Together with many other people, I believe that the costs of changing our energy production from burning fossil fuels to other sources of energy is not at all as high as some politicians claim. The potential damages that we face if we do not act are much higher.

Your new visualization tools are a good new step in the process of explaining the facts about this issue. I wish you many more successes in your work.

T**amas Szabados Budapest, Hungary**

Tim Smit CEO the Eden Centre

The great gift of meaning & optimism from CBAT in the tireless work of Aubrey Meyer. I have yet to find someone who can scientifically disprove the work of Aubrey Meyer."

For most of us the world is an inconceivably big place and the word global, while swank and important sounding conveys little or nothing in terms of emotional charge. Inertia and mute impotence are sometimes the only honest response you can make, because what can an individual do in the face of such figures with so many numbers you go dizzy looking at them let alone understanding them.

The great gift of this web-site and the tireless work of Aubrey Meyer is that you get a sense

that out of the haze a roadmap is presenting itself and it speaks to the most powerful instinct we have – our need for meaning and its close cousin-optimism. Here is evidence that we are engaged in a great game called our future and the odds, while stacked against us, can still be won. To look at the future and know it is still ours to make is a powerful incentive indeed.

Aubrey - Of course you can add my name. How appropriate that in the two hundredth anniversary of the birth of Charles Darwin that I should be standing here in front of the Eden domes, itself a monument to high technological achievement, talking about why it is important that everybody in the world gets behind Contraction and Convergence [C&C].

I don't say things like this lightly. I am not really one for hyperbole or strange religious motivations. What I find is important is that my whole life experience has taught me that things that have proportionality to them, that have melody to them, that are profoundly simple, usually have something right going for them.

And secondly that you can judge an idea by the quality of the enemies it gets and there have been some profound enemies for C&C, which is based on an understanding that perhaps there is something of the night about it there is something not properly scientific.

Well actually it is, it is totally scientific and more important than that it has blended something the age of reason was never able totally to do which is blending the empiricism of it with 'soul'; the quite obvious rightness of a system that apportions to every person on earth a carbon contract that it theirs to dispose of over a period of time to create a parity that enables us to live one with another in a way that enables us to be connected to the earth itself in terms of being able to make us live with the grain of nature and not apart from it.

I have yet to hear anyone provide an argument that makes it ethically unsound, however uncomfortable they may feel about it. I have yet to find someone who can scientifically disprove the work of Aubrey Meyer.

All I have heard is male testosterone-led vanity . . . and I would ask anybody watching this to ask yourself whether you are not actually standing at the moment where we are going to have to reduce carbon by a phenomenal amount over the next forty years. 80% is some poeple's guess. But if you look at the figures it could be far less tha forty years.

We're going to have to have tactics in place to deal with it otherwise we're not going to worthy of the name 'homo sapiens' - what a joke, the wise hominid.

Are we? If we were truly wise we would realize the rightness of this, the mathematics of this; the rightness of the ethics of it and actually understand that even if it is slightly flawed - which I don't think it is - even if it is, its so far better than anything else that has been put on offer, that we should actually go with it simply on a precautionary basis because at least along the path towards it, those little glitches that need to be ironed out, can be.
But the first thing is a statement of commitment and conviction that we truly are worthy of the

name that we gave ourselves. And that is why I return to Charles Darwin. Evolution was the most unpopular theory there was. The amount of people who came out on the streets and said, "we're not descended from apes you know"; adaptation . . . then they suddenly realized that adaptation was rather clever - the survival of the fittest . . . that actually makes us topchaps, actually in authority worthy of it- there's biological reason . . .

Well let me tell you if we can't sort this out, if we can't embrace C&C, the biological reason will have shown why we are redundant.

Wake up, support this, be excited, know you are living in a time in history which is about as important, if not more so, as the dawning of the Renairssance."

Tim Smit CEO The EDEN Project

It is now simply a question of whether the name we gave ourselves - Homo sapiens - was accurate or a monumental act of vanity. now that is a challenge worth rising to. Tim Smit CEO The EDEN Project

Richard Betts UKMO - *"Aubrey is a great and gifted communicator*."

"Thanks for your wise words Tim. Aubrey is a great and gifted communicator."

Adair Turner former Director CBI former Chair Climate Change Committee

C&C the only sound strategy. The UK Climate Act is pretty strong support for what Meyer says.

His analysis really starts to pack a punch when he turns to the environment. Here, after all, is a case of massive market failure. Take climate change, which "is likely to impose massive economic costs... The case for being prepared to spend huge resources to limit it is clear," he says, arguing that the cost will be repaid many times over by the avoidance of disaster.

In any case, "the developed world does not have the moral right to increase the risk of flooding in Bangladesh", and, he adds acidly, "European executives worried about the cost of action should perhaps consider it the necessary price for preserving at least some skiing in the Alps."

Long term, says Turner, the only sound strategy is that of 'contraction and convergence' –cutting greenhouse emissions to the point where they are shared equally, worldwide, on a per capita basis." Article

"In the UK Climate Act we have endorsed the C&C principle. Its pretty strong support for what Aubrey Meyer has said."
The Chairman of the UK Climate Change Committee Adair Turner
Confirms to Parliament that C&C is embedded in UK Climate Act

David Wasdell Appollo Gaia Project

CBAT - a unique breakthrough; separating budget emissions from feedbacks is conceptually brilliant. We recognise that GCI has made a unique breakthrough in creating a user-interactive, non-directive dashboard with potential to simulate such an inclusive range of the system dynamics of the natural/human interaction!

Separating the contribution to CO2 concentrations driven by anthropogenic emissions from the contribution coming from the feedback system is brilliant at a conceptual level."

David Wasdell
Chairman of the Apollo Gaia Group

Rupert Read Green MP Candidate Cambridge & Chair of Green House -

"CBAT needs to used by policy-makers soon, to arrest the very serious hazards we face."

I'm a big fan of CBAT. It sets out with clarity the choices facing us & how the room for manoeuvre narrow, how the spectrum of choices narrows, with each passing year. As I sit here writing these words, it's Halloween - and the temperatures outside would be normal for summer here. It looks like 2014 may well be the warmest year ever, and, in Britain, about the most climate-chaotic year ever.

CBAT needs to be USED by policy-makers, and soon, to arrest the very serious hazards we face if we refuse to make the choices that await us.

Rather than envying the rich, or building up the assets or income of the poor, the necessary thing to do is primarily simply to build down the rich to a level where their (i.e., our) lifestyle actually is sustainable, which is argued for in the contraction & convergence model (Meyer, 2001).

The place to start, if we are to take justice seriously – and that means being just to our children and to people who are not born yet and who may never be if we do not sort out and build down our 'externalities' – is not to seek to haul up the worst off, but to turn the proposition around.

In other words, to question the difference principle. To question the thought that a 'gain' for some or even for all is really a gain at all. Such questioning, as this conclusion has I hope intimated, may lead us even further from Rawls's theory than we expected into a world in which we no longer believe that economic gain for the worst off is necessarily a good thing, beyond a truly decent level of subsistence.

Provided, needless to say, that the world that we create is not the nightmare world of rampant anti-egalitarian capitalism that at present we are perhaps drifting into. Rather, the world that we should build, if this paper is at all right, is a world in which we have a notion of real human needs and of love for one another and of commonality with one another all in the same boat, thus trumping any notion of growth-based 'wealth-creation', even one that supposedly contributes to development for the alleged benefit of the worst-off.

Beyond an ungreen-economics-based political philosophy: three strikes against 'the difference principle' Rupert Read School of Philosophy, UEA, Norwich, NR4 7TJ, UK

Dr Chris Shaw Tyndall Centre for Climate Change Research

CBAT seems to be an incredibly useful tool."

Christopher Shaw
Knowledge Exchange Research Fellow
Environmental Change Institute
University of Oxford
Visiting Fellow, Science and Policy Research (SPRU),
University of Sussex

Associate of the Tyndall Centre for Climate Change Research

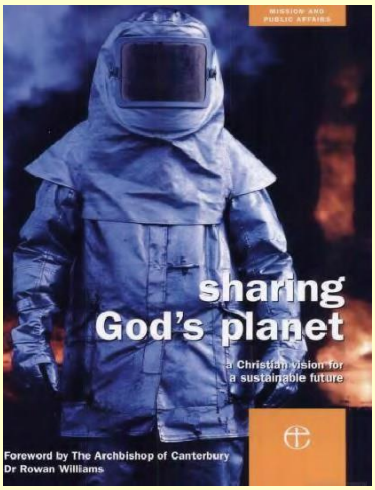
Rowan Williams former Archbishop of Canterbury -

"Those who think C&C is Utopian simply haven't looked honestly at the alternatives."

A manageable first step relating particularly to carbon emissions, supported by a wide coalition of concerned parties, is of course the 'Contraction and Convergence' proposals initially developed by the Global Commons Institute in London. This involves granting to each nation a notional 'entitlement to pollute' up to an agreed level that is credibly compatible with overall goals for managing and limiting atmospheric pollution. Those nations which exceed this level would have to pay pro rata charges on their excess emissions. The money thus raised would be put at the service of low emission nations or could presumably be ploughed back into poor but high-emission nations who would be, so to speak, in credit as to their entitlements, so as to assist them in ecologically sustainable development.

Such a model has the advantage that it seeks to intervene in what is presently a dangerously sterile situation. At the moment, some nations that are excessive but not wildly excessive polluters (mostly in Western Europe) have agreed levels of reduction under the Kyoto protocols, and are moving with reasonable expedition towards their targets; some developed nations that are excessive polluters have simply ignored Kyoto (the USA); some rapidly developing nations that are excessive polluters have also ignored Kyoto because they can see it only as a barrier to processes of economic growth already in hand (India and China). A charging regime universally agreed would address all these situations, allowing the first category to increase investment aid in sustainable ways, obliging the second to contribute realistically to meeting the global costs of its policies, and enabling the third to explore alternatives to heavy-polluting industrial development and to consider remedial policies. This scheme deals with only one of the enormous complex of interlocking environmental challenges; but it offers a model which may be transferable of how international regimes may be constructed and implemented.

If Contraction and Convergence gained the explicit support of the UK government, this would be a significant step towards political plausibility for the programme, and it is well worth keeping the proposals in the public eye with this goal in mind. **Archbishop of Canterbury**



"The vision of contraction and convergence as a response to climate change, which is described in this volume, is one that I support. I have also called upon our Church to undertake an ecological audit of some sort; information about how to do this can be found in Part Three. Such local, internal responses are vital if our voice as a Church is to have integrity."

Sharing God's Planet

"Those who think contraction and convergence is Utopian simply haven't looked honestly at the alternatives."

Rowan Cantuar - The Archbishop of Canterbury

Faith in the Public Square [Can you hear the harmonics? See below] **Rowan Williams**

"One of the features of addictive behaviour is, classically, denial;

we should perhaps not be surprised to find the divided mind I spoke of a moment a go in so much of our economic forecasting. But we learn to face and overcome denial partly by new relationships or new security about relationships enabling us to confront unwelcome truths without the fear of being destroyed by them.

This is why myths matter, and why multiplying statistics doesn't of itself change things. That the world is the vehicle of 'intimate and dynamic relation' with the active and intelligent source of all life is some sort of spur to face our sins and absurdities in dealing with it. But we need to bear in mind also that we are talking not just about the respectful conservation of an environment for its own sake. Concrete material processes have, so to speak, caught up with the myth, and we should be able to see that offences against our environment are literally not sustainable.

The argument about ecology has advanced from concerns about 'conservation': what we now have to confront is that it is also our own 'conservation', our viability as a species, which is finally at stake. And what is more, in the shorter term, what is at stake is our continuance as a species capable of some vision of universal justice. Not the least horror of our present circumstances is the prospect of a world of spiralling inequality and a culture that has learned again to assume what Christianity has struggled to persuade humanity against since its beginning - that most human beings are essentially dispensable, born to die, in Saul Bellow's harsh phrase. I needn't elaborate on how this makes absolute nonsense of any claim to be committed to a gift-based view of the world and of our individual and social relations. There is in the long run no choice between this spiralling inequality (and the fortress societies it will create) and some realistic step to deal with our addictions.

The Global Commons Institute, based in London, has in recent years been advancing a very sophisticated model for pushing us back towards some serious engagement with this matter of equality, through its proposed programme of 'Contraction and Convergence'. This seeks to achieve fairly rapid and substantial reductions in greenhouse gas emissions - but to do so in a way that foregrounds questions of equity between rich and poor nations. At the moment, rates of emission are fantastically uneven across the globe. In the first 48 hours of 2004, an average American family would have been responsible for as much in the way of emissions as an average Tanzanian family over the entire year. So what is proposed is that each nation is treated as having the same limited 'entitlement to pollute' - an agreed level of carbon emission, compatible with goals for reducing and stabilizing overall atmospheric pollution.

Since, obviously, heavily industrialized, high-consumption nations will habitually be using a great deal more than their entitlement and poorer nations less, there should be a pro rata charge on the higher users. They would, as it were, be purchasing the pollution 'credits' of less prosperous

countries. And this charge would be put at the service of sustainable development in poorer nations in accord with the Millennium Development Goals. This would be treated not as an aid issue, but as a matter of trading and entitlement. The hoped-for effect in the medium term would be convergence: that is, a situation in which every citizen of the globe would be steadily approaching the same level of responsibility for environmental pollution. Because such a programme would necessarily challenge over-average users to reduce (otherwise an intolerable tax burden would be imposed), we could look for a reduction in the addictive levels of dependence in wealthier countries and a stimulus to develop renewable energy sources. We should also achieve a dependable source of development income, neither loan nor aid, for the countries suffering most intensely from the existing inequities.

This kind of thinking appears utopian only if we refuse to contemplate the alternatives honestly. Climate change has rightly been described by Sir David King, Chief Scientific Adviser to the Government, as a 'weapon of mass destruction', words echoed by Hans Blix, the former UN weapons inspector. In the current atmosphereof intense anxiety about terrorism, 'rogue states' and long-term political instability, we absolutely cannot afford to neglect what is probably the most deep-rooted source of further and potentially uncontrollable instability in the foreseeable future."

Rowan Williams, the finest theologian in Britain, offers in these essays the most penetrating analysis of the moral, cultural and economic crisis of our times, and of the role of faith in the public arena. It should be read by politicians, economists and artists, and by anyone who cares for the future of our society and planet.

Timothy Radcliffe OP

ABC is on record with accomplished C&C advocacy in the CoE dcoument 'Sharing God's Planet' and on page 66 of the DAVOS document Faith and the Global Agenda: Values for the Post-Crisis Economy

His effect on the faith Community has been profound

Dr Chris Groves Cardiff University -

"CBAT is an achievement to be proud of, being an excellent tool for bringing urgency home to all."

'I consider C&C to be the basis of any genuine solidarity between present and future generations in response to climate change. CBAT is an achievement to be proud of, being an excellent tool for bringing home to everyone and policymakers in particular the urgency of building this solidarity.'

Dr Christopher Groves
Research Associate
School of Social Sciences
Cardiff University

Future-focused care ethics necessariuly require that we now consider how the present distribution of opportunities and capabilities will shape the future world.

We are thus required to recognize that care for the present is not necessarily care for the future, just as care for others is not possible if care-givers are not themselves propersly taken care of, in the puiblic and private spheres.

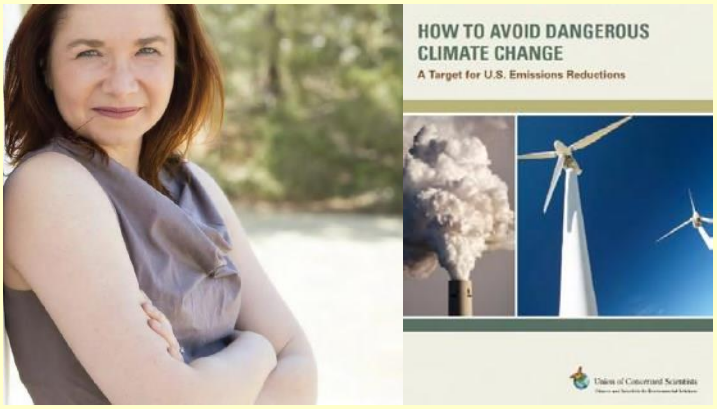
The result is an imperative to weave together both dimensions of care, an imperative that has guided the development of governance frameworks developed in response to global warming such as Contraction and Convergence and Greenhouse Development Rights.

Care, Uncertainty and Intergenerational Ethics
Christopher Groves

Associate Professor Katherine Hayhoe Texas Tech University - *"Thanks - I'll be using CBAT in my graduate class."*

"Cool new tool from Global Commons Institute, lets you design your own global emissions scenarios. What do YOU think is fair?

Thanks - I'll be using CBAT in my graduate class."



Given a global emissions budget (the overall amount of carbon that can be released into the atmosphere worldwide), the next task is to allocate each nation's share of responsibility for the budget—first, by dividing the budget between industrialized and developing nations as a whole, and then, among individual nations. Several proposals suggest that the most equitable approach

would be to allocate global emissions reductions by population for example Contraction and Convergence

How to Avoid Dangerous Climate Change Union of Concerned Scientists

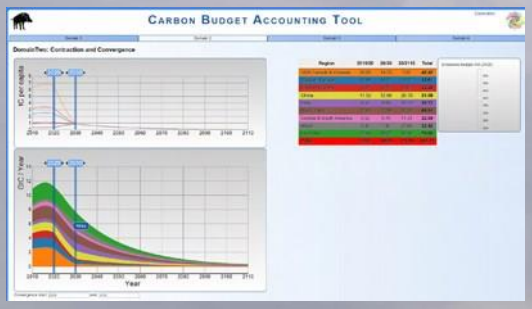
Katharine Hayhoe is a research associate professor in the Department of Geosciences at Texas Tech University and chief executive officer of ATMOS Research & Consulting.

The FOUR Domain Carbon Budget Analysis Tool [CBAT]

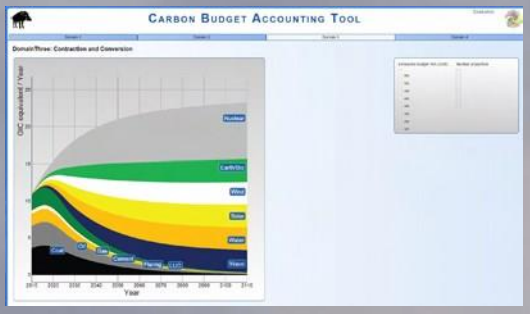
This 'CBAT' is a user-interactive screen-based 'heuristic device'. Its unique value is giving the user options in 4 Domains that are four views of the same 'Contraction-Event'.

CBAT DOMAIN ONE; Contraction and Concentrations: -
The default budget position is the UK Climate Act. Different budgets, feedback and climate sensitivity gradients and transients are dynamically graphed and tabulated in response to user-choices.

CBAT DOMAIN TWO; Contraction and Convergence: -
Horizontal sliders offer users any start/end-points showing gross and per capita emissions for the world in 8 regions convergence-window in any of the budgets available, as in Domain 1.



CBAT DOMAIN THREE; Contraction and Conversion: -
The the rate of conversion to the renewable alternatives is tied to the rate of carbon-contraction chosen as in Domain 1. Within that the proportion of Nuclear is a further user-choice.



CBAT DOMAIN FOUR; Damages & Growth: -
The growth-rate is net of the damage-rate attending the budget/feedback choices made in Domain 1. The dynamic shows the higher the budget the greater and faster the damage-rate.